REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested.

Claims 1-23 are pending in this application. Claims 1-23 are amended to better define the present invention without the introduction of any new matter.

The outstanding Office Action includes objections to the drawings, specification, Abstract, and claims as well as a rejection of Claims 1-23 under the second paragraph of 35 U.S.C. §112, a rejection of Claims 1-4 and 7 under 35 U.S.C. §102(e) as being anticipated by Divsalar (U.S. Patent No. 6,023,783), and a rejection of Claim 6 under 35 U.S.C. §103(a) as unpatentable over Divsalar.

It is believed that the objection to the drawings should be withdrawn in view of the presentation of the new drawing sheets including the labeling of all boxes in FIGS. 1, 2, and 4-7.

It is also believed that the objection to the Title appearing on page 1 of the specification and the objection to the use of legal phraseology and indication of a figure in the Abstract should be withdrawn in view of the present amendments thereto which remove the objected to Title from page 1 of the specification and the legal phraseology and indication of a figure from the Abstract.

Similarly, it is believed that the objections to the claims have been overcome by the present claim amendments that correct the noted improper multiple dependancy of Claims 5 and 8-23, that removes the objected to language as to "the error-correcting coding type" from all claims in addition to objected Claim 4, that corrects the multiple dependency statement in Claim 4 as suggested in the outstanding Action, that removes the objected to reference

characters from all of the claims, and that removes the objected to phrase "the said" from Claims 1-23.

It is further believed that the removal of the phrase "the error-correcting coding type" from all claims and the phrase "the said" from all claims overcomes the part of the rejection of Claims 1-23 under the second paragraph of 35 U.S.C. §112 that raised these phrases as the rationale for rejecting Claim 1 on these grounds and Claims 2-23 dependent thereon.

If the Examiner believe that further formal changes to the Abstract, the specification, the claims or the drawings are required, he is invited to contact Applicants' representative at the below-indicated telephone number so that mutually agreeable formal changes can be agreed upon.

Turning to the second rationale offered as to rejecting Claims 1-23 under the second paragraph of 35 U.S.C. §112 as being "incomplete for omitting essential elements," and citing MPEP §2172.01 as authority for such a rejection, it is noted that the latest version of MPEP §2172.01 (Rev. 1, Feb. 2003) does not use the term "incomplete" and emphasizes that it is only with regard to "essential elements of the invention defined by applicant(s) in the specification" that a rejection under the second paragraph of 35 U.S.C. §112 may be made. Here, the specification contains no such indication of "essential elements" as to specific associations or actual relationships questioned in the outstanding Action.

Further in this regard, MPEP §2173.04 (Rev. 1, Feb. 2003) reminds examiners that "[b]readth of a claim is not to be equated with indefiniteness" (citing In re Miller, 441 F.2d 689, 169 USPQ 597 (CCPA 1971)). This section further reminds all examiners that [i]f the scope of the subject matter embraced by the claims is clear ... then the claims comply with 35

U.S.C. §112, second paragraph. As this is clearly the case here, this improper rejection based upon subjectively derived "incompleteness" and not on any disclosure of essential elements that must be included is traversed.

With regard to the rejection of Claims 1-4 and 7 under 35 U.S.C. §102(e) as being anticipated by Divsalar, it is noted that the explanation of the rejection suggests that the Claim 1 step of "calculating at least one characteristic quantity from a set of the weighted output information items" is somehow taught by the FIG 20 B showing of L_{1k}-L_{3k} outputs from corresponding Map or Sova steps being input to inverse interleaving steps. This interpretation is not believed to be a reasonable interpretation.

The quantity L_k disclosed by Divsalar (Fig. 20B) is a likelihood ratio of the transmitted information (Divsalar column 17, lines 1-18), that is a weighted estimate of the transmitted information after one or several decoding iterations, one iteration being composed of 3 elementary decoding steps in Fig. 20B. L_{ik} (i=1, 2, 3) is also a likelihood ratio related to the same information but delivered by each elementary decoder and exchanged (after subtraction of the input to yield extrinsic information L_i (m+1)) with the other elementary decoders inside a decoding iteration, Divsalar column 19, lines 18-32). These quantities simply represent the state of the art of iterative decoding (also called turbo decoding) and no novelty is being asserted relative to them.

On the other hand, the characteristic quantity of Claim 1 is further computed from these weighted outputs (as, for instance, the mean of the absolute values of the extrinsic outputs, as stated in Claim 6) and has no equivalent quantity in Divsalar nor in the state of the art. This new characteristic quantity serves to provide a quality indicator of the decoded

information. The computation and use of this new characteristic quantity is not taught or suggested.

Consequently, the rejection of Claim 1 is based on confusion between these quantities. See page 8 of the Action and note L_{ik} are state of the art weighted outputs and are different from the characteristic quantities of Claim 1. Similarly, L_k is a state of the art weighted output of the turbo decoder and is different from the characteristic quality parameter of Claim 1.

Compounding these unreasonable characterizations as to the Claim 1 characteristic quantity is the assertion that L0, $L_1(m)$, $L_2(M)$, and $L_3(M)$ "are used to configure the elementary decoders" and can be read as "configuration parameters." Where is the teaching to be found in Divsalar that L0, $L_1(m)$, $L_2(M)$, and $L_3(M)$ "are used to configure the elementary decoders" as simply asserted in the Action. See In re Rijckaert, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) ("When the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference.").

Accordingly, the rejection of base Claim 1 under 35 U.S.C. §102(e) as being anticipated by Divsalar is traversed. As Claims 2-4 and 7 all depend at least on Claim 1, the rejection of these claims under 35 U.S.C. §102(e) as being anticipated by Divsalar is traversed for the same reasons as Claim 1.

With further regard to Claim 3 and Divsalar, L_o represents a state of the art weighted input of the turbo decoder (also called a priori information) and $L_1(m)$, $L_2(m)$, $L_3(m)$, $L_1(m+1)$, $L_2(m+1)$, $L_3(m+1)$ represent state of the art weighted information exchanged

between elementary decoders inside a turbo decoder iteration (also called extrinsic information). These quantities are not equivalent to the decoded quality parameter of Claims 1 and 3. Indeed, the decoded information quality parameter is computed from these state of the art quantities (as for instance a statistical quantity as stated in Claim 5) and at least one configuration parameter (such as the signal to noise ratio, for instance).

With further regard to Clam 7, it is clear that equation (30) of column 19 of Divsalar is a general formulation for computing output extrinsic information for an elementary decoder from the input information coming from channel observation and extrinsic information produced by the other elementary decoders. Equation (30) outputs state of the art extrinsic information that will be used by the other elementary decoders.

However, the statistical function of Claim 7 is not related to equation (30) of Divsalar because it takes place after the extrinsic information is provided by equation (30). Thus, replacing equation (30) by the statistical function (mean of the absolute values for instance, as suggested in the Action) will not have the same effect as equation (30) and will not produce weighted output information that can be used by the other elementary decoders. The effect obtained by the statistical function of Claim 7 is different from producing extrinsic information because the aim is to produce a quality indicator of the weighted information (which is the extrinsic information in a particular embodiment). There is no teaching or suggestion of this to be found in Divsalar.

Furthermore, the rejection of Claim 6 under 35 U.S.C. §103(a) as unpatentable over Divsalar is traversed for the same reasons as Claim 1 as this claim also depends on Claim 1.

Moreover, as each of dependent claims 2-4, 6, and 7 add further features not shown or

suggested by Divsalar, the rejections applied to these claims are traversed for this reason as well.

As no other issues are believed to remain outstanding relative to this application, it is believed to be clear that this application is in condition for formal allowance and an early and favorable action to this effect is, therefore, respectfully requested.

Respectfully submitted,

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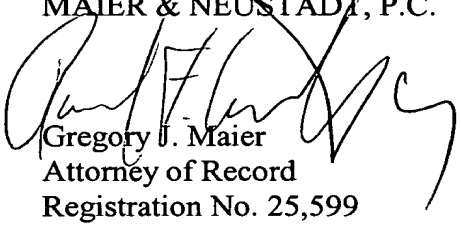
MAIER & NEUSTADT, P.C.



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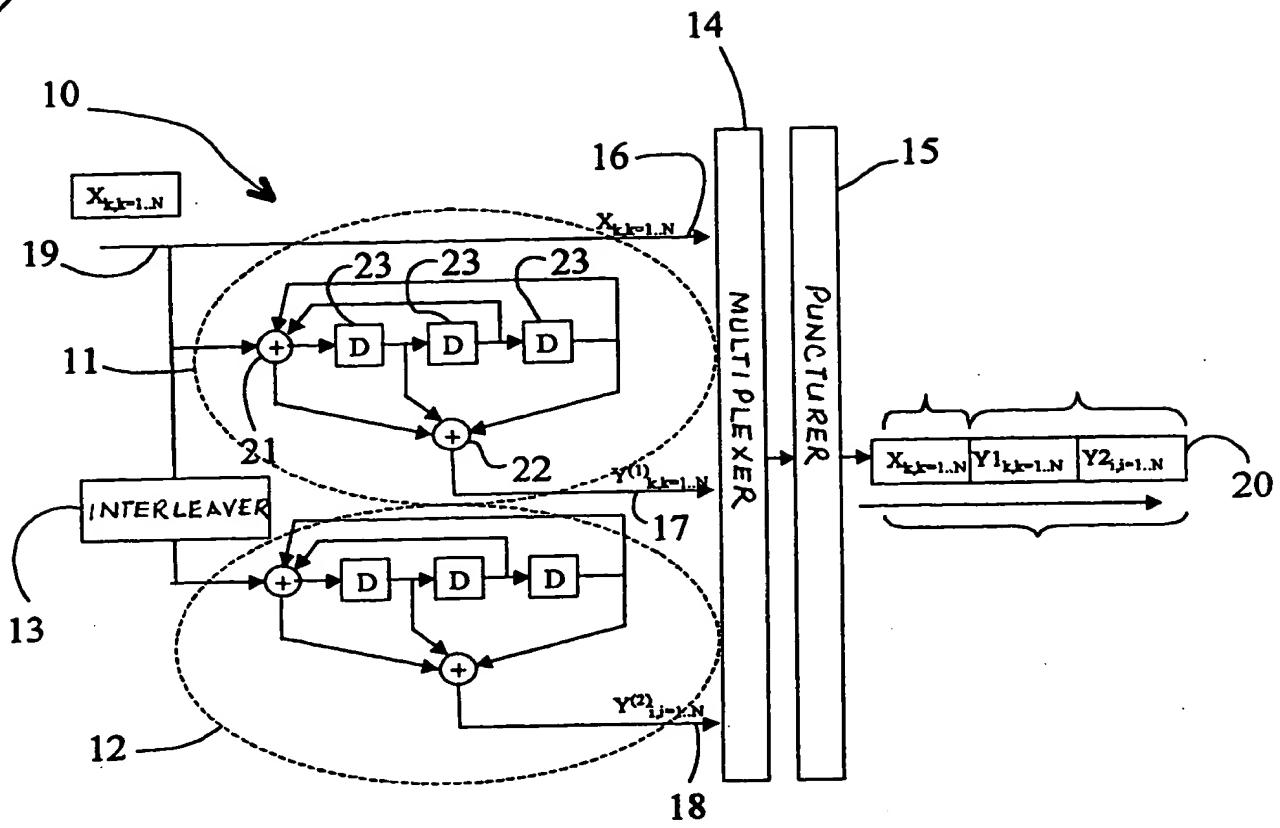

FIG. 1

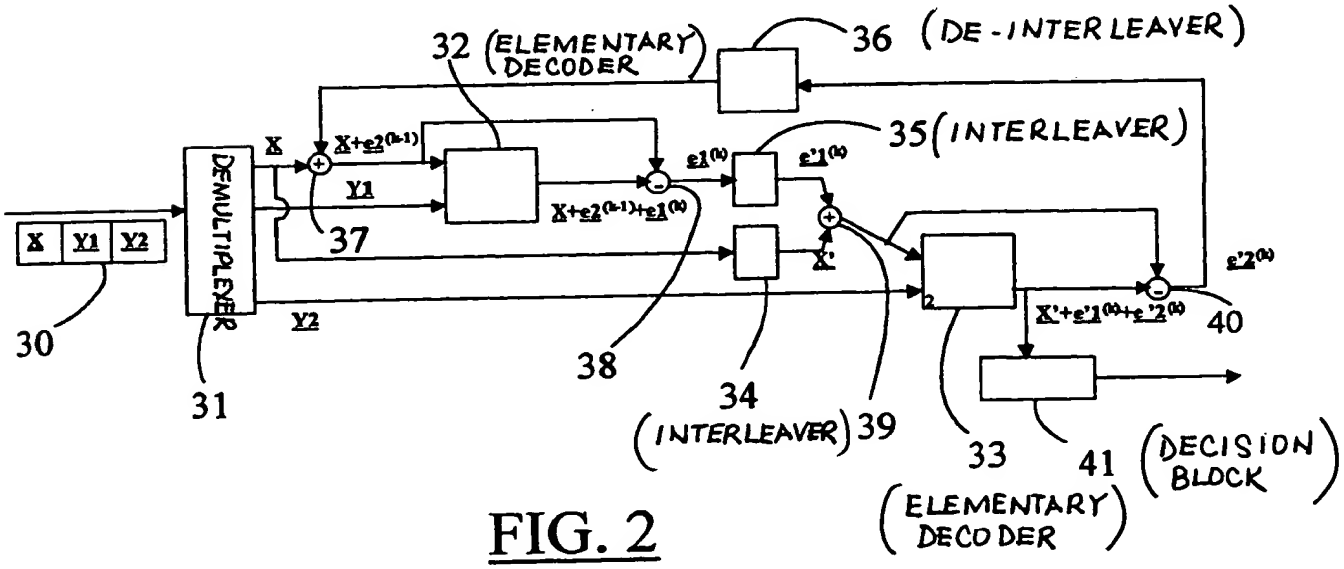

FIG. 2

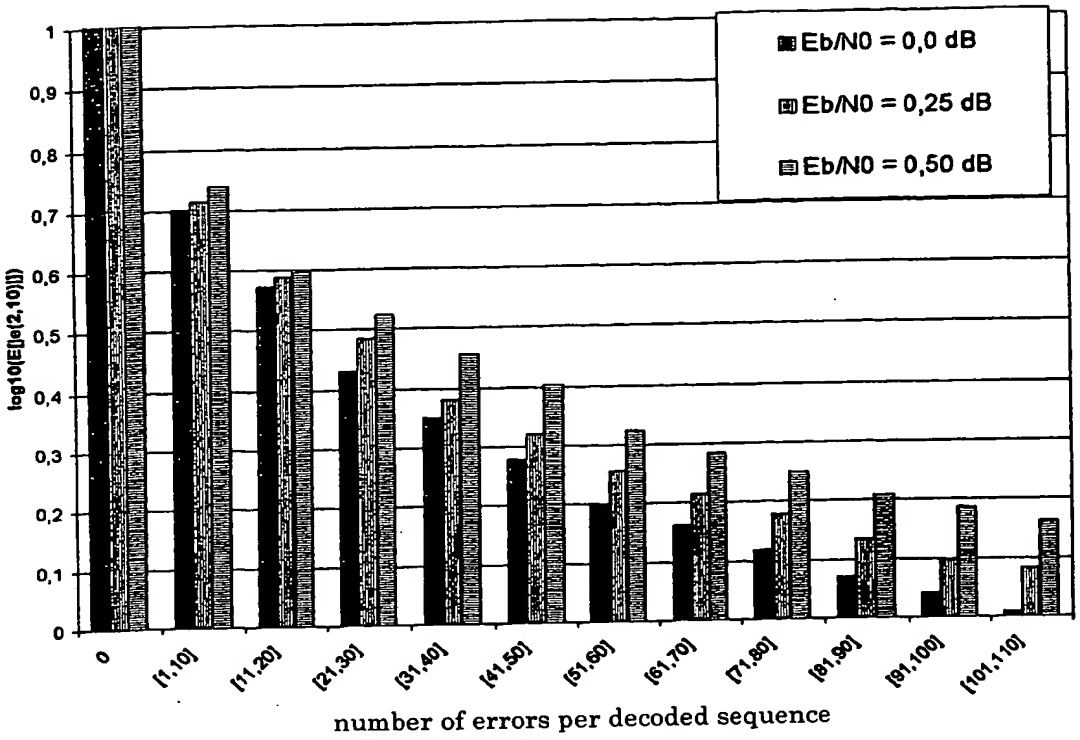

FIG. 3

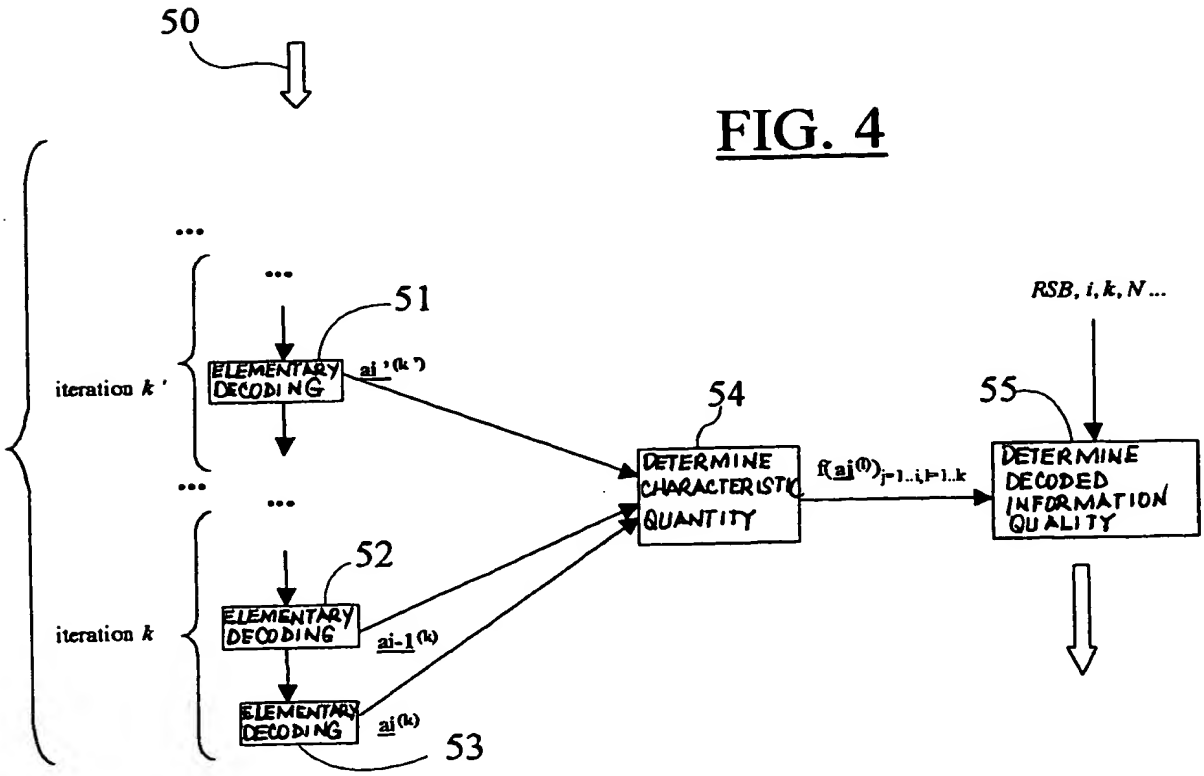

FIG. 4

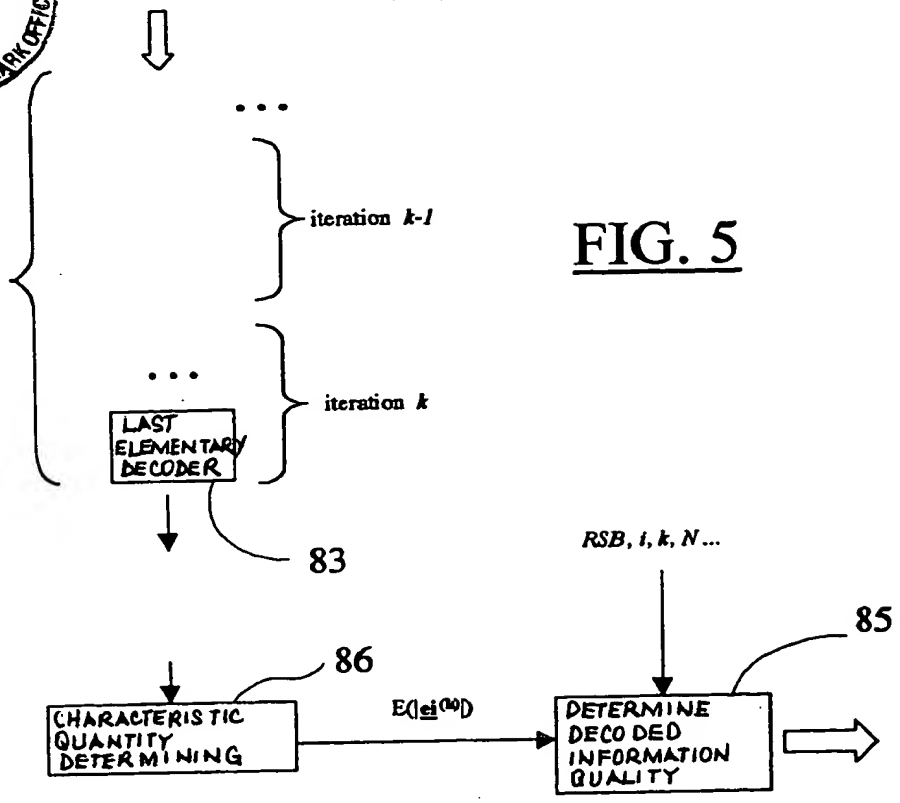

FIG. 5

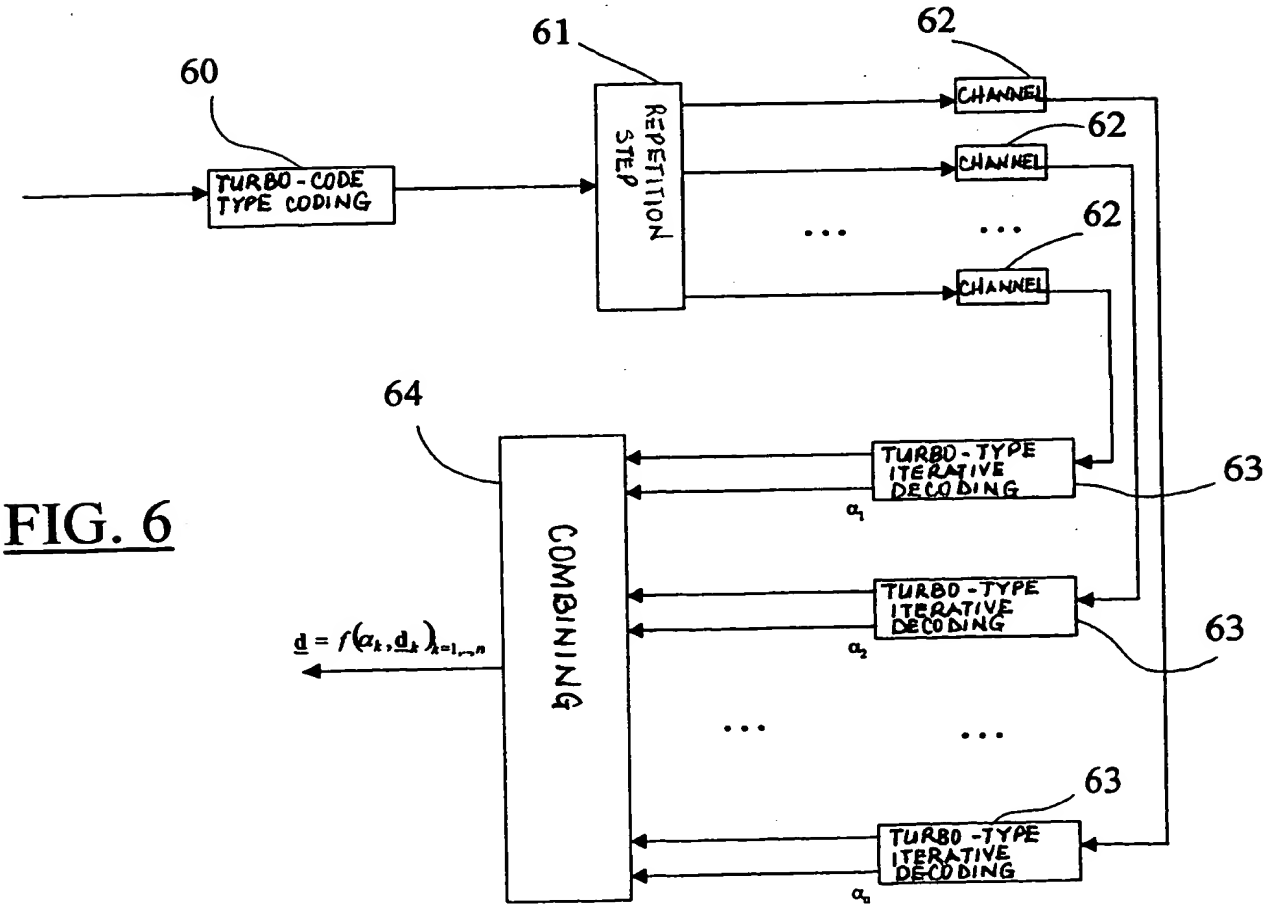

FIG. 6

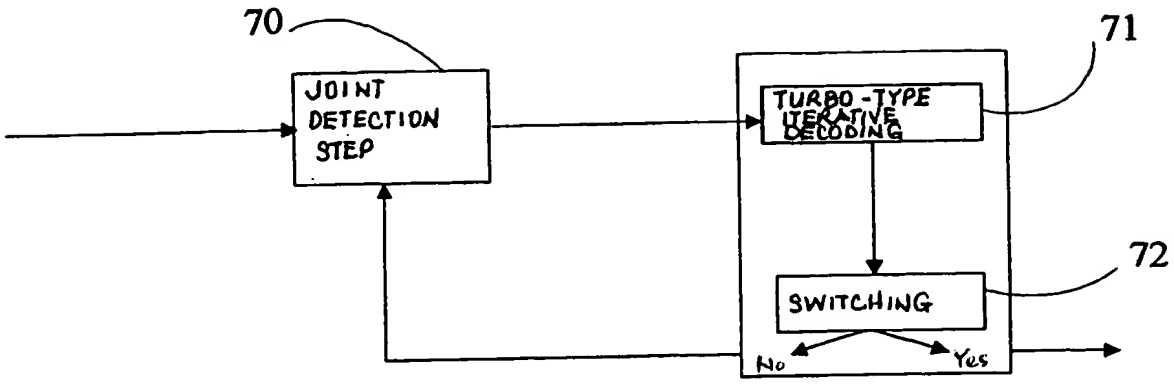

FIG. 7